

constructs of said expression library including a second coding region encoding for one of a plurality of polypeptides, each of said plurality of second expression constructs of said expression library further including a third coding region encoding a reporter molecule, said second coding region and said third coding region being under a transcriptional control of at least one promoter being regulatable by said transactivator, such that when said first expression construct and a second expression construct of said plurality of second expression constructs of said expression library are introduced into a cell, said cell endogenously expressing said trans acting regulator of the transduction pathway, a level of expression of said reporter molecule in said cell is indicative of regulation of the transduction pathway by a specific polypeptide of said plurality of polypeptides expressed by said cell from said second expression construct when compared to a predetermined level of said expression of said reporter molecule.

Claim 44. (Amended) The expression system of claim 24, wherein said second coding region encoding for one of a plurality of polypeptides includes a polynucleotide sequence selected from the group consisting of a polynucleotide sequence represented in a genome and a polynucleotide sequence not represented in a genome.

Claim 47. (Amended) The expression system of claim 24, wherein said polypeptide is selected from the group consisting of a characterized polypeptide, at least a 5 amino acid portion of a characterized polypeptide, a combinatorial polypeptide and a polypeptide chimera.

Claim 92. (Amended) A method of detecting a polypeptide capable of regulating a transduction pathway, the method comprising the step of:

(a) introducing into cells endogenously expressing a trans acting regulator of the transduction pathway a first expression construct, said first expression construct including a first coding region encoding a transactivator, said first coding region being under transcriptional control of a cis acting regulatory sequence element, said cis acting regulatory sequence element being regulatable by said trans acting regulator of the transduction pathway; and

(b) introducing into at least a portion of said cells an expression library including a plurality of second expression constructs, each second expression construct of said plurality of second expression constructs of said expression library including a second coding region encoding for one of a plurality of polypeptides, each of said plurality of second expression constructs of said expression library further including a third coding region encoding a reporter molecule, said second coding region and said third coding region being under a transcriptional control of at least one promoter being regulatable by said transactivator,

(c) monitoring a level of expression of said reporter molecule in said cells, said level of expression within a predetermined range being indicative of regulation of the transduction pathway by a polypeptide of said plurality of polypeptides; and

(d) isolating said second coding region from a cell of said cells in which said level of expression of said reporter molecule is within said predetermined range.

Claim 103. (Amended) The method of claim 92, wherein each second expression construct of said plurality of second expression constructs of said expression library further includes a fourth coding region encoding a known polypeptide, said fourth coding region being translationally fused to said second coding region encoding for one of a plurality of polypeptides.

Claim 109. (Amended) The method of claim 92, wherein said second coding region encoding for one of a plurality of polypeptides includes a polynucleotide sequence selected from the group consisting of a polynucleotide sequence represented in a genome and a polynucleotide sequence not represented in a genome.

Claim 112. (Amended) The method of claim 92, wherein said polypeptide is selected from the group consisting of a characterized polypeptide, at least a 5 amino acid portion of a characterized polypeptide, a combinatorial polypeptide and a polypeptide chimera.